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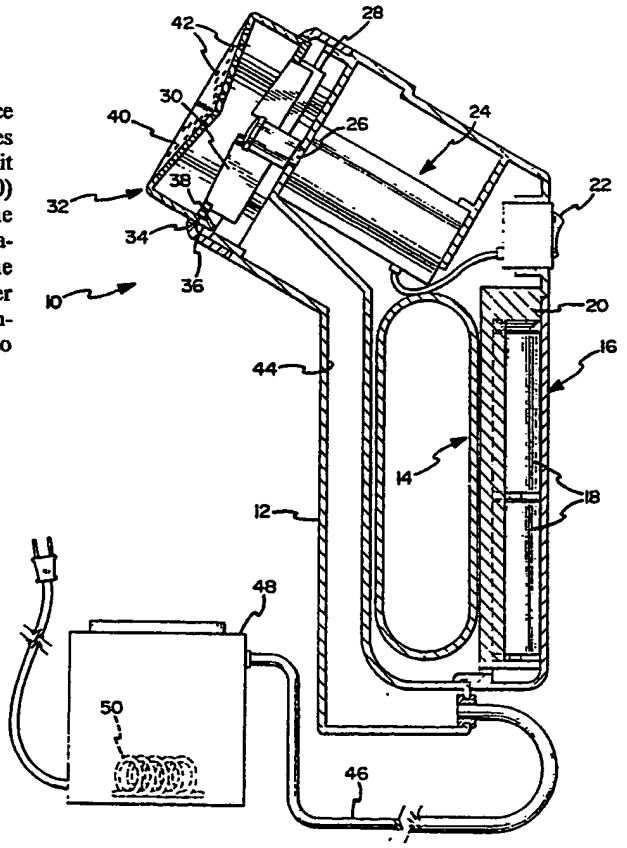
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(54) Title: THE SKIN CLINIC STEAMER

(57) Abstract

A steam generation unit (48) and skin treatment device (10) which may be connected by a hose (46) which supplies steam to the applicator unit (10, 150, 164). The applicator unit (10, 150, 164) may be a hand held skin buffing apparatus (10) or also may be in the form of a pad which may be joined to the body for applying therapeutic steam thereto (150). The applicator may also be a razor shaver combination (164) in which the steam may be applied through the handle (168) of the shaver assembly. The steam generation unit (48) may also be combined with the buffing apparatus or the shaver assembly to form a self-contained unit (52).



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Thomas L. Mehl

THE SKIN CLINIC STEAMER

Field of the Invention

This invention relates to a new process and apparatus for using the therapeutic properties of steam.

Background of the Invention

Steam has been used in body treatment because of the advantageous effect of moisture-laden vapor in skin and hair treatment and also as an inhalant. The use of steam in hair treatment allows hair fibers to be moistened and facilitates setting and quick drying of the hair. The use of steam as an inhalant allows water vapors to be drawn into the nasal passages and moisturize those areas without blocking the air passages.

The use of steam in skin treatment is known generally and applied at steam baths causing perspiration and opening of the pores. The use of steam as a body treatment aids in relaxing muscles and helps to cleanse the skin through the heating of the natural oils to a more liquified state which facilitates removal through wiping or washing them away.

In using steam as a skin treatment, certain areas of the body require more treatment than others. For example, the face is the most often treated area. It is therefore more convenient to use a steam applicator which can be applied to portions of the anatomy which allows for a smaller steam application device and a lower quantity of steam.

In view of the foregoing, it can be seen that there is a need for a device which uses the beneficial properties of steam to enhance effective body treatment.

Features and Summary of the Invention

It is a first feature of the invention to provide a skin treatment device which is attached to a steam generating chamber and passes steam through a pad which can buff or wipe the skin surface as steam is applied.

Yet another feature of the invention is to provide a hand held self-contained steam generation device and applicator which can apply steam to selected areas of the body while simultaneously buffing or wiping those areas.

Still another feature of the invention is to include a medication in the liquid of the steam generation unit which has beneficial skin treatment properties.

Yet another feature of the invention is to provide a buffing device associated with the steam generation

device to impart a vibrating or reciprocating motion to assist in effective skin treatment.

Still another feature of the invention is to provide a self-contained power unit for operating the buffing unit of the skin treatment device.

Another feature of the invention is to provide a plurality of buffing heads for applying the buffing apparatus to varied contours of the body.

Still another feature of the invention is to provide a steam generation unit connected with a heating pad device for applying steam and heat to portions of the body.

Yet another feature of the invention is to provide a shaver mechanism combined with a steam generation unit to provide a steam applicator in combination with the shaving unit to enhance the effectiveness of the shaver.

In summary, therefore, the invention is directed to body treatment devices which operate directly in contact with the skin and use steam to enhance the effectiveness of the treatment apparatus.

In one embodiment the treatment apparatus is a buffing head which may be stationary or motorized to provide a reciprocating or oscillating action to vigorously rub the skin surface to remove oils, and dead skin cells, make-up, dirt and the like from the skin surface as steam is applied. When treating facial areas, a treated pad may be used on the applicator

surface to directly apply medication to the skin. Medication may also be dissolved in the liquid and released in the steam vapor to come into contact with the skin.

A steam generation unit may be located separate from the applicator and connected thereto by a hose which supplies the steam to the applicator unit. The applicator may be a hand held skin buffing apparatus or may also be in the form of a pad which may be joined to the body for applying therapeutic steam thereto.

Another embodiment is a steam razor combination in which the steam may be applied through the handle of the shaver assembly and flow between the twin blades to aid in shaving.

The invention will be further described with reference to the following drawings.

Brief Description of the Drawings

FIGURE 1 is a perspective view of a skin steaming and buffing apparatus;

FIGURE 2 is a cross-sectional view of a hand held steam and buffing apparatus;

FIGURE 3 shows a self-contained steaming and buffing apparatus;

FIGURE 4 shows a plan view of a cross-section of the buffing head of Figure 2 taken along lines 4-4;

FIGURE 5 is a side view of the buffing head;

FIGURES 6-9 are different embodiments showing

different head shapes and pad attachment structures;

FIGURE 10 shows a heating pad attached to a steam generation unit; and,

FIGURE 11 shows a razor attached to the steam generation unit.

Detailed Description of the Invention

Figure 1 shows a skin treatment device 10 having an exterior casing 12 formed of plastic or other suitable material. Plastic is preferred for its durability and light weight. Casing 12 includes a finger opening 14 therein which permits grasping of the casing 12 by the hand so that the fingers may wrap around through the hole 14 and grasp handle portion 16.

Inside the handle portion 16 is located a set of batteries 18 located within a formed housing 20 and includes the conventional wiring for providing electricity from the batteries 18 to the switch 22. The batteries are accessible through a removable plate (not shown). It should be understood that a rechargeable battery or other power source could be substituted for the batteries 18.

Switch 22 is preferably simply an on-off device, but could also be a rheostat for variably supplying electric current from the batteries 18 to a motor 24.

Motor 24 is held in axial alignment with respect to the upper portion of the casing 12. Motor 24 is preferably of sufficient power to rotate a drive shaft

at a speed between 20 and 80 rpm. Motor 24 also has sufficient torque to drive its shaft through a certain amount of resistance. The motor includes a drive shaft 26 which is connected to a rotating disk 28.

Preferably, rotating disk 28 includes a plurality of fan blades 30 which assist in sweeping the steam laden vapor out of the casing 12 and upward to a buffing head 32. Buffing head 32 is removably connected to the rotating disk 28 by resiliently engaging the side edge 34 of the rotating disc 28 with extending legs 36 having detents 38 for engaging the side edge 34 resiliently.

Figure 1 shows the buffing head 32 having a concave face 40, but other shapes may be used depending on the contour of the particular area of the body. Face 40 of buffing head 32 includes a plurality of perforations 42 which permit vapor to pass therethrough.

Casing 12 includes a steam passageway 44 which connects to a hose 46 extending from a steam generator 48. The steam generator 48 includes a resistor element 50 which is supplied with electricity from a conventional plug-in outlet (not shown). The resistor element 50 heats water in the steam chamber to create the steam which flows along hose 46 and into the casing 12. The steam generator 48 is preferably large enough to hold about a pint of water. The water may be inserted through a screw-on cap (not shown).

Figure 3 shows a skin treatment device 52 which is a self-c ntained unit. The unit has a casing 54 having a handle hole 56 formed therein. A handle 58 is formed between the hole 56 and an outer wall 60 of the casing 54.

Wall 60 includes a removable door 62 which is removeably attachable to wall 60 to provide access to a battery chamber 64. A pair of batteries 66 are normally located within the battery chamber 64 and are preferably a pair of AA batteries connected in series which provide power to a switch 68. Switch 68 is preferably simply an on-off device, however a rheostat may also be substituted to provide a variable control over electrical energy flowing to the motor 70.

Motor 70 is designed to operate in an rpm range between 20 and 80 rpm preferably, and provides sufficient torque to a drive shaft 72 to overcome a predetermined degree of resistance. Drive shaft 72 is connected to a combination disc and fan assembly 74 which performs two functions. First, the fan assembly 74 draws air through opening 76 from the exterior of the casing 54 and also mixes this air with steam flowing through passageway 78 from water chamber 80.

Water is prevented from flowing from water chamber 80 into passageway 78 when the skin treatment device 52 is inverted by one-way valve 82 which permits steam to pass therethrough but prevents the passage of water.

Water chamber 80 forms a container which is removable from the skin treatment device 52 and frictionally connects to casing 54.

Water chamber 80 includes a resistor element 84 which heats the water held therein to generate steam. Resistor element 84 is held in place by a suitable resin 86 and includes a through wall fitting 88 which is connectable electrically to a female receptacle 90 connected to casing 54. Female receptacle 90 is electrically connected to another female receptacle 92 which is connectable with an electric cord for connecting the receptacle 92 to a wall socket.

As steam is generated in the water chamber 80, the steam flows through one-way valve 82 into passageway 78. The steam is then mixed with incoming air from passageway 76 and is mixed and drawn by fan 74 to cool the steam and propel the steam/air mixture through buffing head 94. Buffing head 94 includes a series of passageways 96 in concave face 98.

A circumferential side wall 100 extends downwardly from face 98 and preferably includes three extending legs 102 having detents 104 thereon for engaging the rotating disc assembly 74 and maintaining the buffing head in 94 in proper position.

A section taken along lines 4-4 of Figure 3 is shown in Figure 4 of the buffing head 94. Figure 4 shows the pattern arrangement of perforations 96 preferably used in the buffing head. Figure 5 shows

the side wall 100 having depending legs 102 and detents 104. Preferably, buffing head 94 is sized to completely cover the disk and fan assembly 74 to prevent the escape of steam along the side wall 100 and enhance the flow of steam through the perforations 96. If the buffing head 94 is smaller than the area covered by the disc and fan assembly 74, then steam will escape around the side wall 100 which may result in a loss of effectiveness.

Figure 6 shows a conical shaped buffing head 106 having a pad 108 mounted thereon. Pad 108 may be formed of slightly abrasive material which aids in removing dirt and make-up and dead skin cells from the skin surface. Pad 108 may also be made of an absorbent material such as cotton to hold medication or absorb oils from the skin. Commercially available pads may be used such as Stridex™ brand. Pad 108 is held in position by a series of hook and loop fastener material. The hook and loop fastener material includes one set of hooks or loops 110 mounted on the buffing head 106 and a second set of hooks or loops mounted on the 112 near the pad edge 114. The conical shape of buffing head 106 is preferred for areas of the skin such as the sides of the nose and around the mouth for maximum contact between the pad 106 and the skin surface.

Figure 7 shows a hemispherical shaped head 116 having a pad 118 mounted thereon. Pad 18 is held in

place on head 116 by a snap ring 120 which clips into a circular slot 122 below the hemispherical head 116. Ring 120 preferably forms an arc of between 180° and 360°.

Figure 8 shows a curved buffing head 124 which is covered with hook and loop fastener material 126. Pad 128 includes complimentary hook and loop fastener material 130 mounted to the under surface thereof to connect with the hook and loop fastener surface 126 on the buffing head 124. Pad 128 may also be constructed of material which is complimentarily fastenable to the hook and loop fasteners 126.

Figure 9 shows a curved head 132 having along a side wall 134 a set of pad-engaging hooks 136. Pad 138 includes a curved surface 140 covering the curved head 132 and includes a side wall 142 surrounding a portion of the side wall 134 of the buffing head 132. Side wall 142 includes openings 144 for engaging hooks 136 on side wall 134 for retaining the pad 138 on curved buffing head 132.

Figure 10 shows an embodiment of the invention wherein the steam generator 146 is used to provide a steady flow of steam through hose 148 to a compress-type device 150. Compress 150 includes a porous pad 152 which envelopes a series of steam supply tubes 154 to provide a uniform flow of steam throughout the compress 150. The compress 150 can be used as a heating pad and attached to various portions of the body such as joints

to provide relief from pains from arthritis as well as muscle strains and can also be used as a facial towel to open the pores of the skin in preparation for treatment with cleaning pads or medication. Complimentary hook and loop fastener strips 158 may also be applied to the porous enclosure to assist in maintaining the compress on a portion of the body.

In Figure 11 another embodiment of the invention is shown which uses the steam generation unit 160 to produce a steady flow of steam through delivery hose 162 to a razor 164. The hose 162 connects to the base 166 of the razor handle 168 and steam flows through razor handle 168 and out a vent 170 located near the point of skin contact of the razor blades 172. Preferably, the vent 170 is between the blades 172 so that steam can be applied to the face as shaving occurs. The heated steam tends to soften the hair and improves the cutting efficiency of the razor blades.

The shaver of Figure 11 may also be constructed as a self-contained unit similar to the combination steamer and buffing device of Figure 2. The self-contained shaver would include a heating unit which may be electric or propelled by a butane heater which is known in the art.

While this invention has been described as having a preferred design, it is understood that it is capable of further modifications, and uses and/or adaptations of the invention and following in general the principle

of the invention and including such departures form the present disclosure as come within the known or customary practice in the art to which the invention pertains, and in any case be applied to the central features hereinbefore set forth, and fall within the scope of the invention or limits of the claims appended hereto.

IN THE CLAIM:

1. A hand held steamer device for treating skin surfaces, comprising:

a) a housing containing a steam generating means associated with skin contacting means for supplying steam to the skin surfaces to be treated; and,

b) said skin surface contacting means being moveable for simultaneously treating the skin surfaces as steam is applied to the skin surfaces from said steam generating means.

2. The hand held steamer device as set forth in Claim 1, wherein:

a) said skin surface contacting means includes a porous surface which allows steam supplied from said steam generating means to pass therethrough.

3. The hand held steamer device as set forth in Claim 1, wherein:

a) said surface contacting means includes a buffing means mounted thereto.

4. The hand held steamer device as set forth in Claim 3, wherein:

a) said buffing means being formed of a pad of natural fiber material.

5. The hand held steamer device as set forth in Claim 3, wherein:

a) said buffing means being formed of a pad of filament fiber material.

6. The hand held steamer device as set forth in Claim 3, wherein:

a) said buffing means being formed of a pad of abrasive material.

7. The hand held steamer device as set forth in Claim 3, wherein:

a) said buffing means being formed of a pad of soft absorbent material.

8. The hand held steamer device as set forth in Claim 3, wherein:

a) said buffing means having medication applied thereto.

9. The hand held steamer device as set forth in Claim 1, wherein:

a) said steam generating means includes a supply of water and medication for supplying medicated steam to the skin surfaces.

10. The hand held steamer device as set forth in Claim 1, wherein:

a) said housing further includes a motorized fan means for propelling steam from said steam generating means to the skin surface to be treated.

11. The hand held steamer device as set forth in Claim 10, wherein:

a) said fan means also includes a reciprocating disk; and,

b) said reciprocating disk includes a buffing means mounted thereto.

12. The hand held steamer device as set forth in Claim 11, wherein:

a) said buffing means includes a porous surface for allowing the passage of steam therethrough.

13. The hand held steamer device as set forth in Claim 12, wherein:

a) said buffing means includes a skin treatment pad thereon.

14. The hand held steamer device as set forth in Claim 13, wherein:

a) said pad is removeably mounted to said buffing means.

15. The hand held steamer device as set forth in Claim 14, wherein:

a) said pad is attachably detached to said buffing means using hook and loop fastener material.

16. The hand held steamer device as set forth in Claim 14, wherein:

a) said pad is detachably attachable to said buffing means using a split ring.

17. The hand held steamer device as set forth in Claim 14, wherein:

a) said buffing means includes a side wall having a plurality of hooks extending therefrom;

b) said pad includes openings for engaging said hooks along said side wall.

18. The hand held steamer device as set forth in Claim 1, wherein:

a) said skin surface contacting means includes a buffing means and said steam from said steam generating means flows through said buffing means when the skin surface is treated.

19. The hand held steamer device as set forth in Claim 1, wherein:

a) said skin surface contacting means

includes a buffing means connected to said housing containing said steam generator means forming a self-contained skin treating unit.

20. The hand held steamer device as set forth in Claim 1, wherein:

a) said skin surface contacting means includes a pad for steaming skin surfaces.

21. The hand held steamer device as set forth in Claim 1, wherein:

a) said skin surface contacting means includes shaving means.

FIG. 1

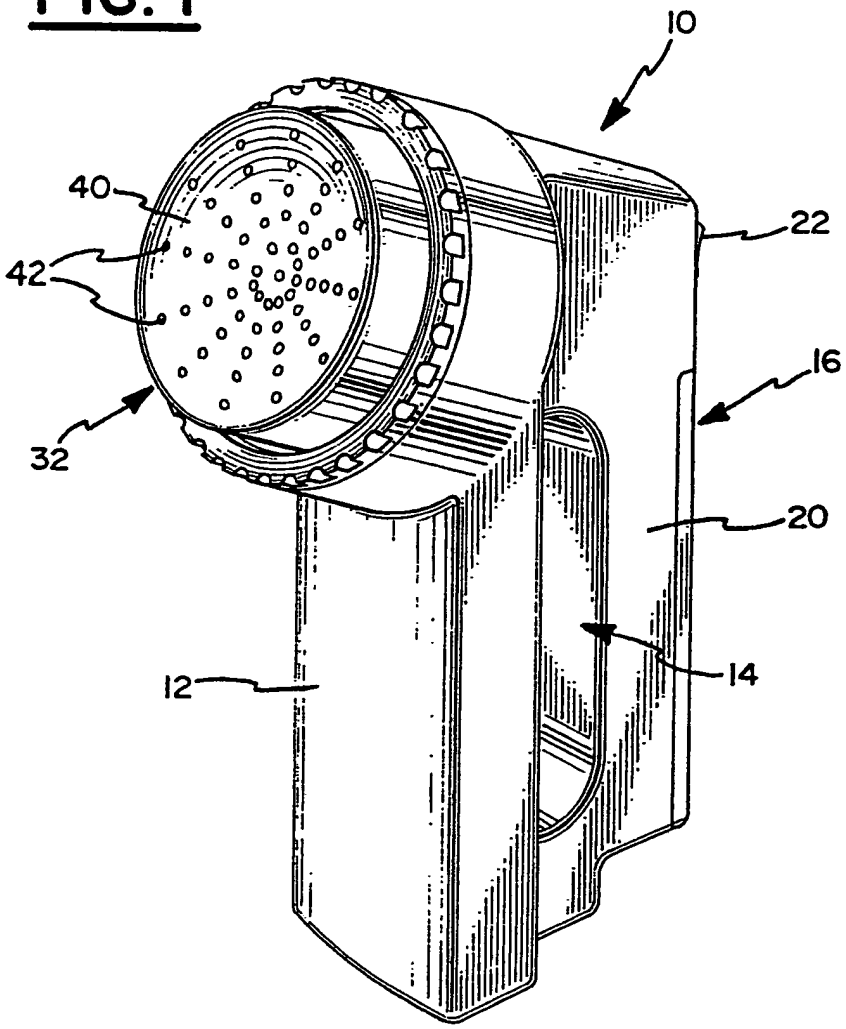


FIG. 2

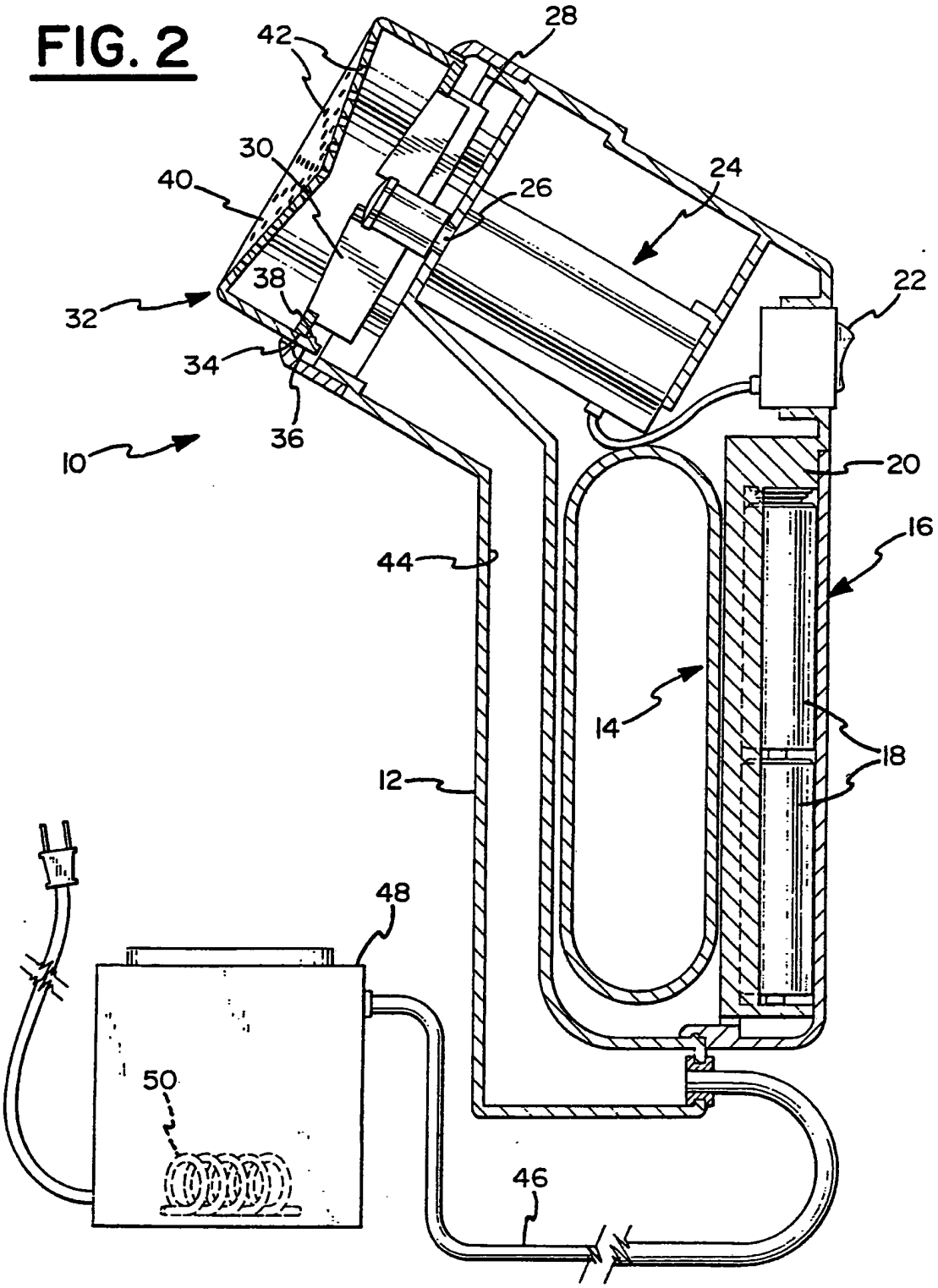
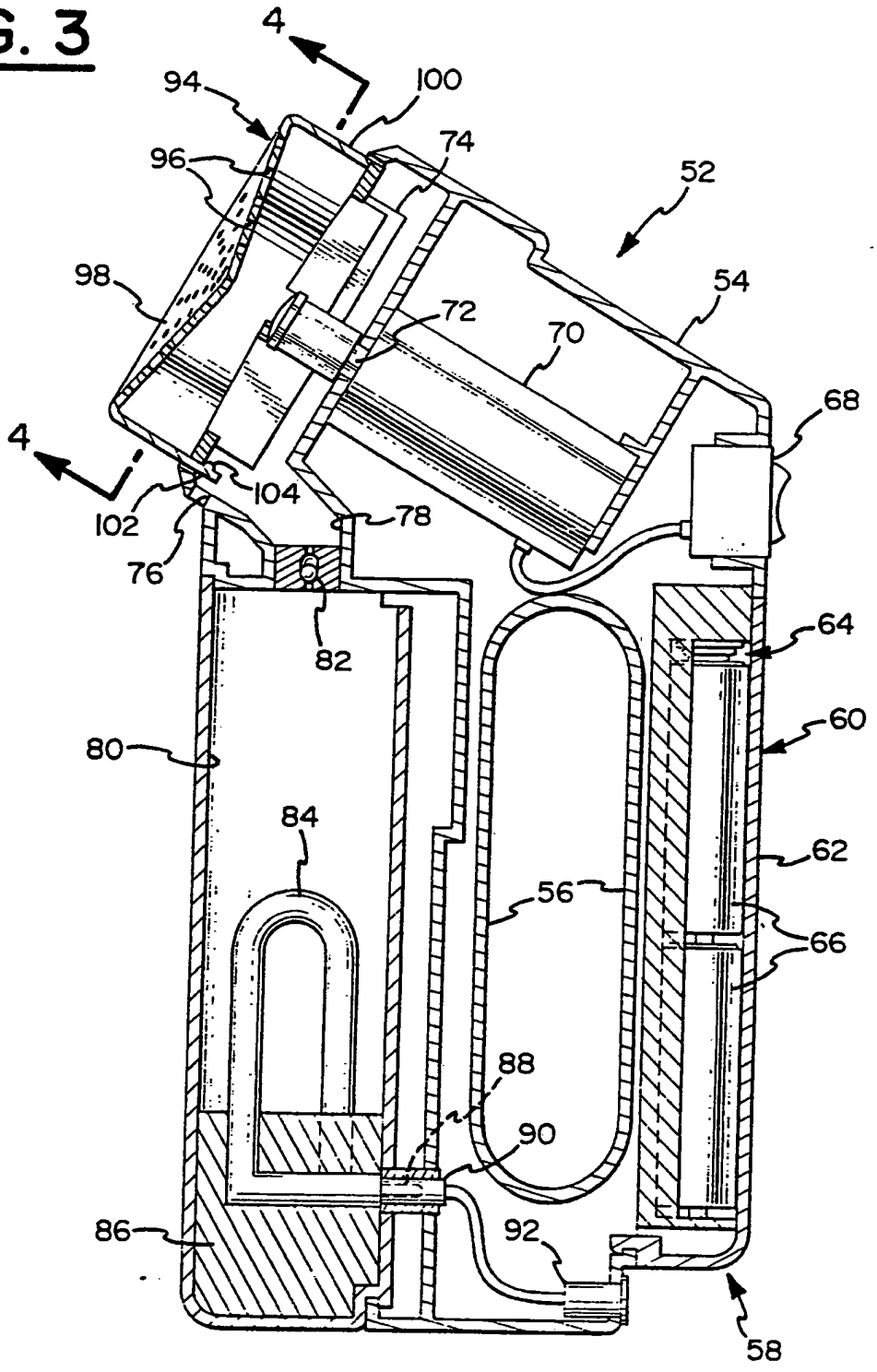


FIG. 3


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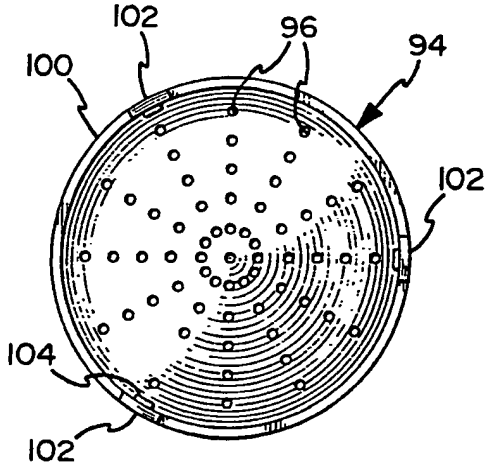


FIG. 4

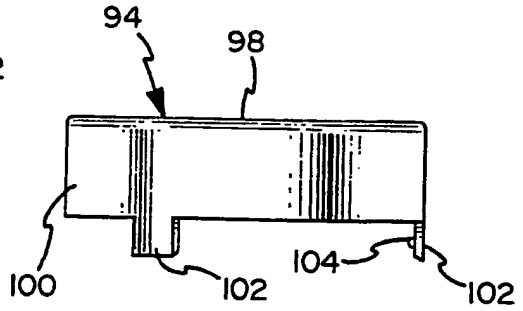


FIG. 5

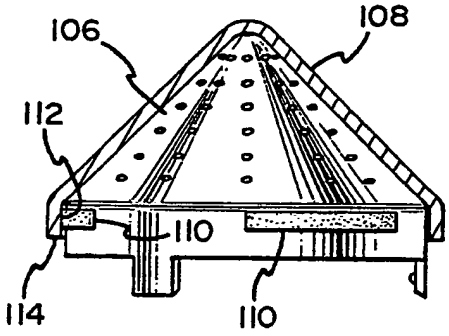


FIG. 6

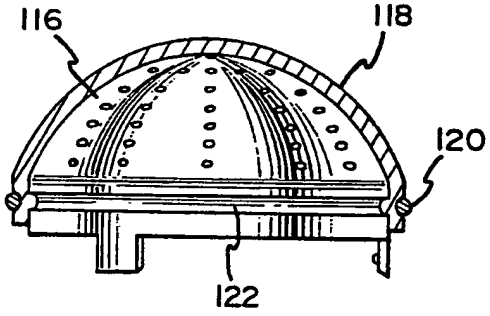


FIG. 7

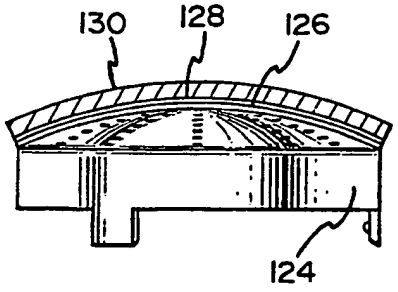


FIG. 8

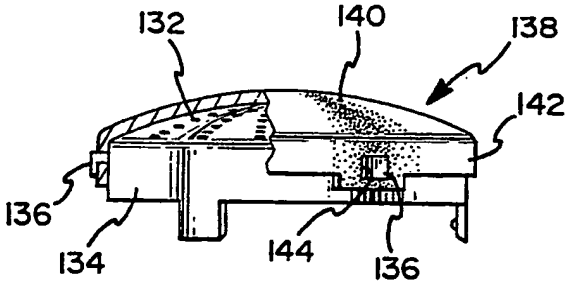


FIG. 9

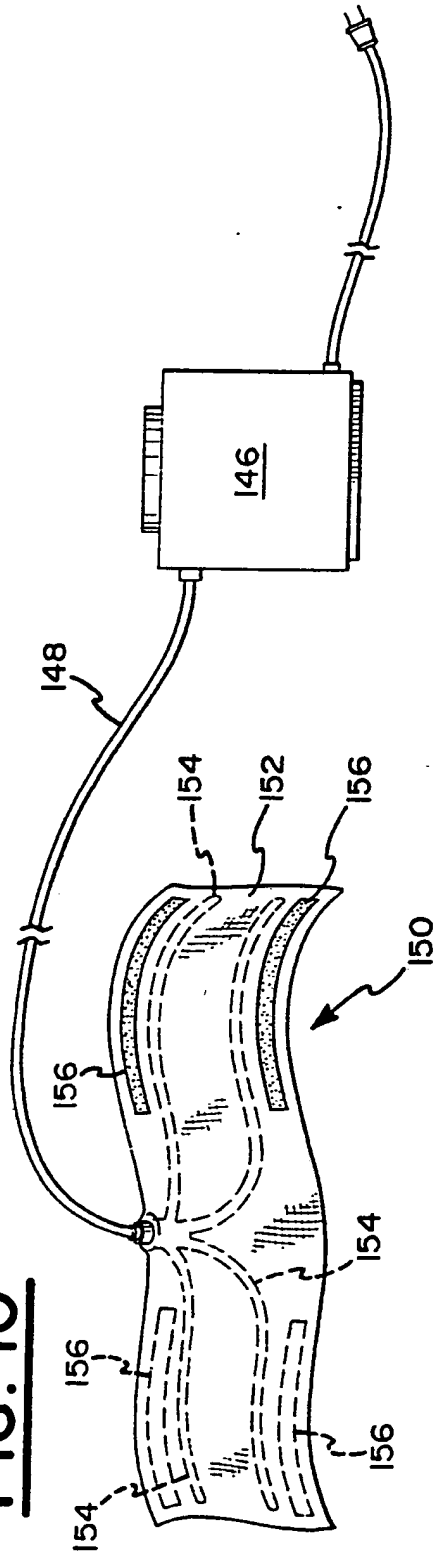

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FIG. 10

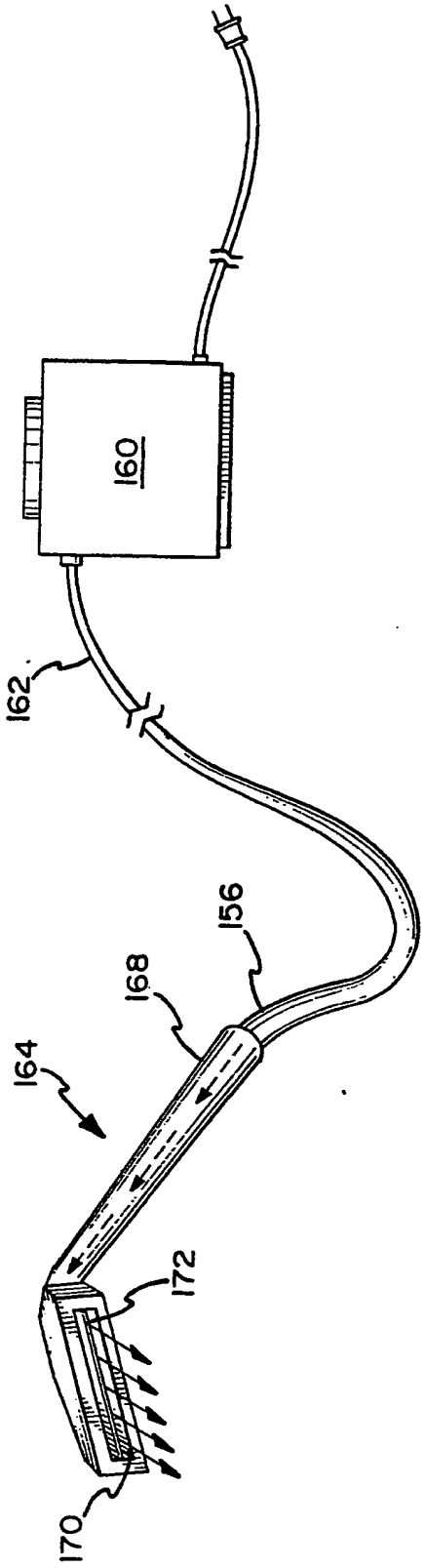

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FIG. 11

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US92/04198

A. CLASSIFICATION OF SUBJECT MATTER

IPC(5) :A61F 7/00, A61M 37/00
US CL :604/291
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 604/289,290,303,310, 128;24.1-24.5,44,56,65,67,400,402,368

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	US,A 4,657,531 (CHOI) 14 APRIL 1987 SEE COL. 1 LINES 55-56	1-5,8-9 18-21 6-7
A	US,A 4,596,565 (RUDERIAN) 24 JUNE 1986 SEE ABSTRACT	1-21
A	US,A 4,597,757 (RUDERIAN) 01 JULY 1986 SEE ABSTRACT	1-21

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
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